CoAP Tutorial for Eclipse

This tutorial shows how to run a CoAP server using Eclipse, and view the CoAP resources through Copper, the CoAP user-agent.

1. Download Eclipse for Java developers.

http://www.eclipse.org/downloads/packages/eclipse-ide-java-developers/neon1a

If you already have Eclipse installed, then you don't need to do this step. No need to install, unzip the package and you can run Eclipse now.

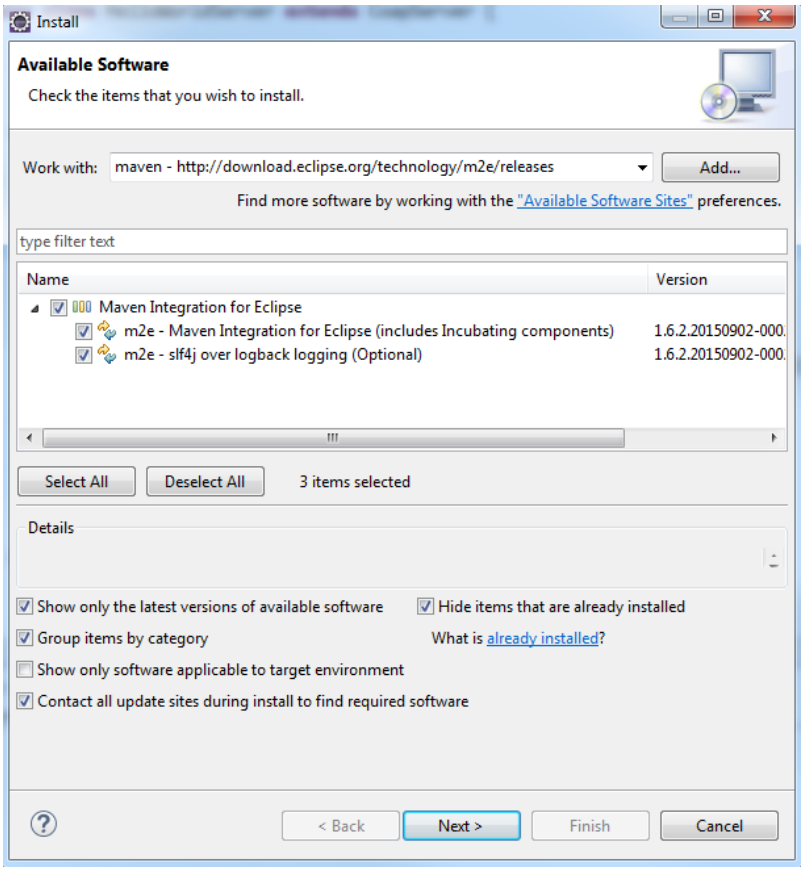
2. Install Maven plugin for Eclipse

Maven may have already come together with Eclipse, if not, install it as below.

Run Eclipse, click *Help-> Install New Software…,* in the *Work with:* field, enter the following website:

http://download.eclipse.org/technology/m2e/releases

In the output, select *Maven Integration for Eclipse*, click *Next*, and *Next*, until it is installed. You may need to restart Eclipse after the installation.



3. Download CoAP library

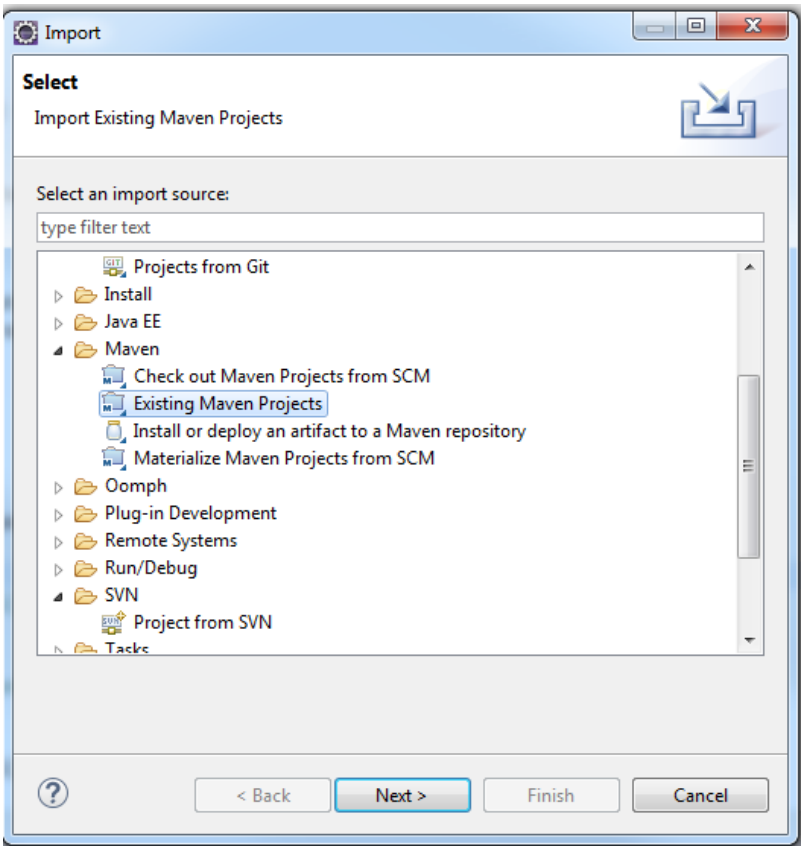
On windows, download the .zip file directly from the github page:

https://github.com/eclipse/californium

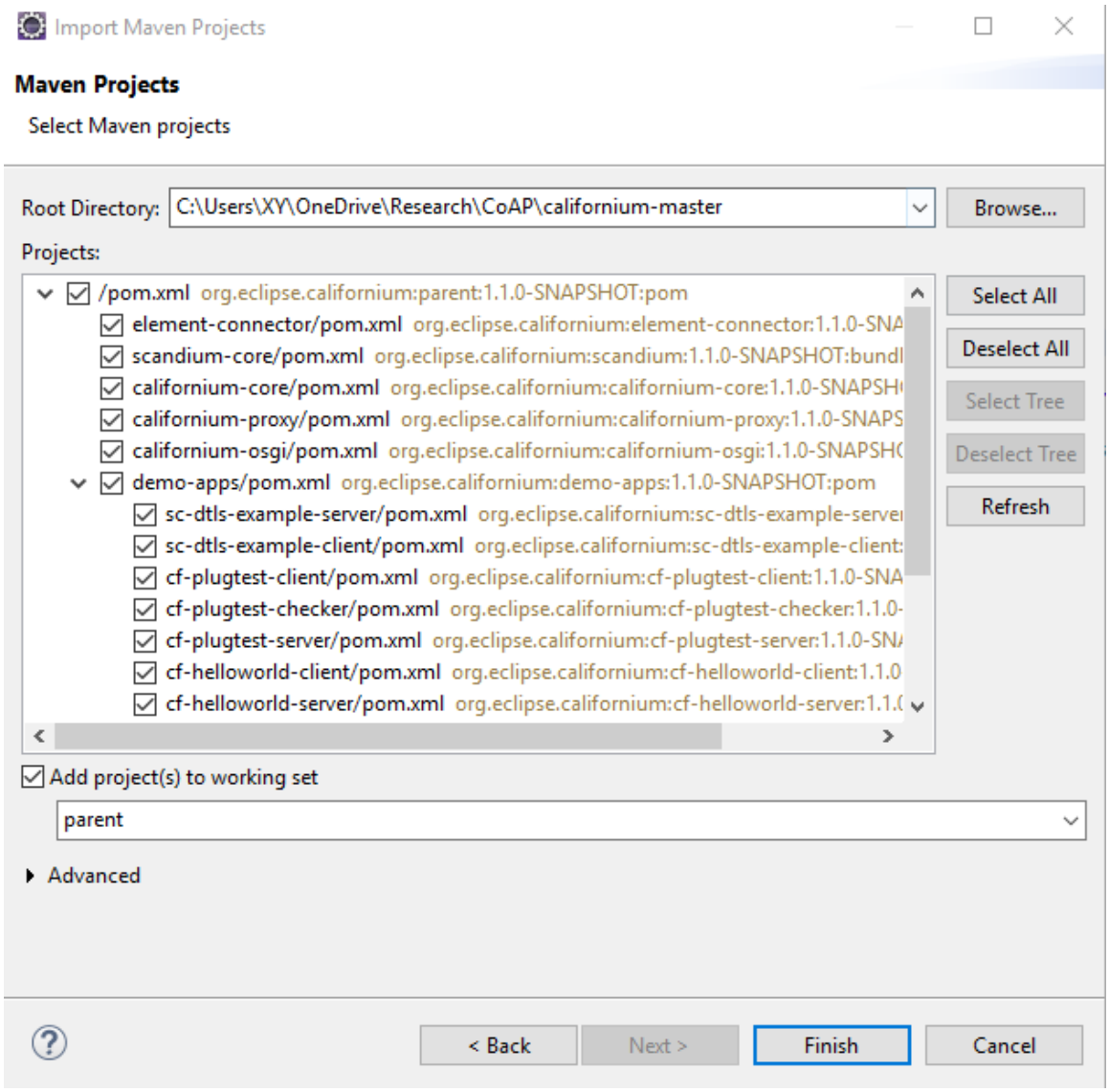
Then unzip it.

4. Import the Californium to Eclipse:

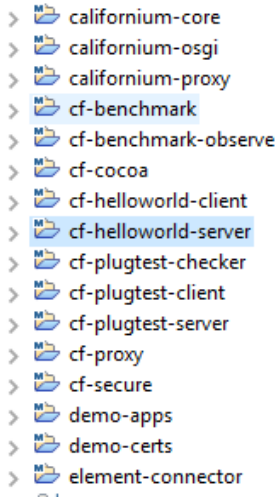
Click *File -> Import…*, you would see the following dialog.



Select *Maven->Existing Maven Project*, then click *Next*. You would see the following dialog. In the *Root Directory:*, browse to your *californium-master* folder. Check all the *pom.xml* files, then click *Finish*.

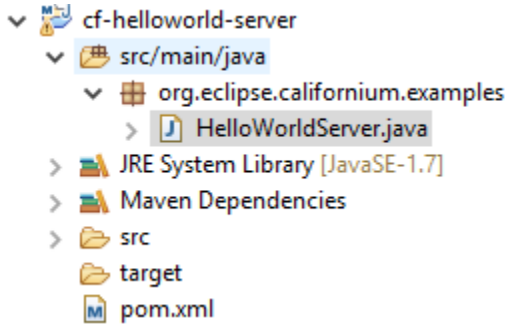


You would see all the Californium libraries and projects are listed on the left.

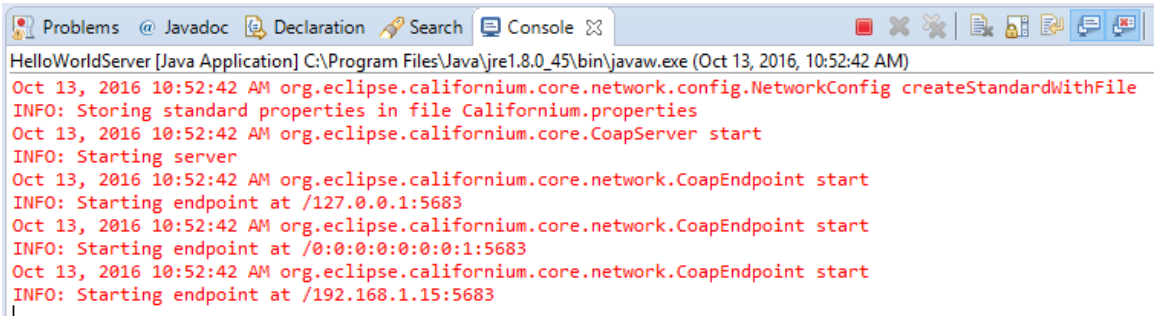


5. Run Hello World

Select the Hello World example, double click it, the code is already compiled automatically by Eclipse. Click *Run -> Run*, you will have a Coap server running on your computer.



You will see the output as the following:



To stop the server, click the RED square near the Console.

Basically, you will modify this example for your Project 2. Add sensor readings as "**resources**" in CoAP server. Refer to class "`HelloWorldResource`" in the `hello-world-server` example.

```
class HelloWorldResource extends CoapResource {

    public HelloWorldResource() {

        // set resource identifier
        super("helloWorld");

        // set display name
        getAttributes().setTitle("Hello-World Resource");
    }

    @Override
    public void handleGET(CoapExchange exchange) {

        // respond to the request
        exchange.respond("Hello World!");
    }
}
```

You can also check the examples from the following Github repository:

https://github.com/jvermillard/hands-on-coap

7. Install Copper user-agent add-ons on Firefox.

You must have Firefox browser installed to run this CoAP client. Open your Firefox browser, and load the following link from Firefox:

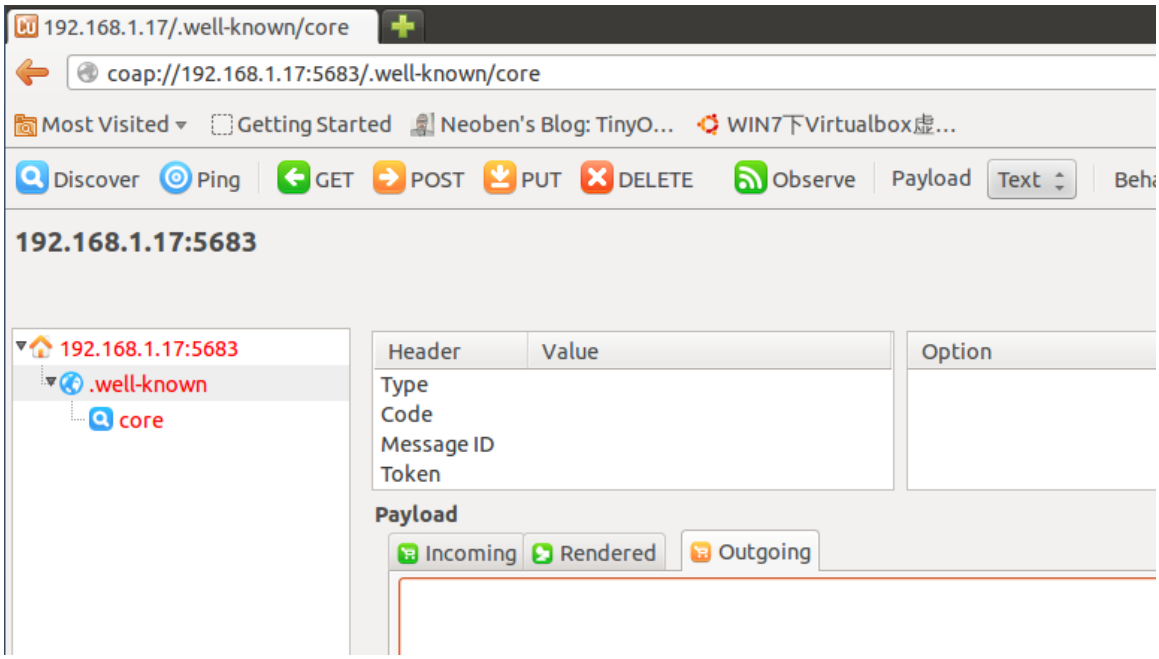
https://addons.mozilla.org/en-US/firefox/addon/copper-270430/

Then simply click the “Add to Firefox” button to install Copper.

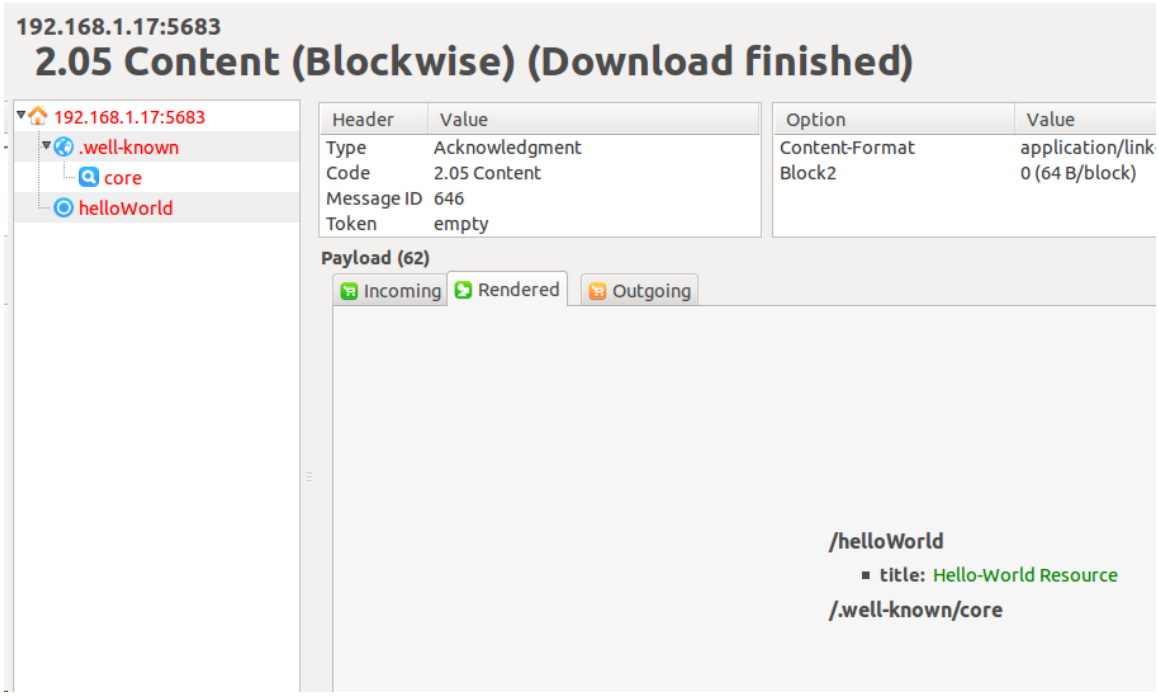
8. Access the “HelloWorld” server through Copper

Type the following CoAP address to access the “HelloWorld” server. Suppose the ip address of your computer is 192.168.1.17:

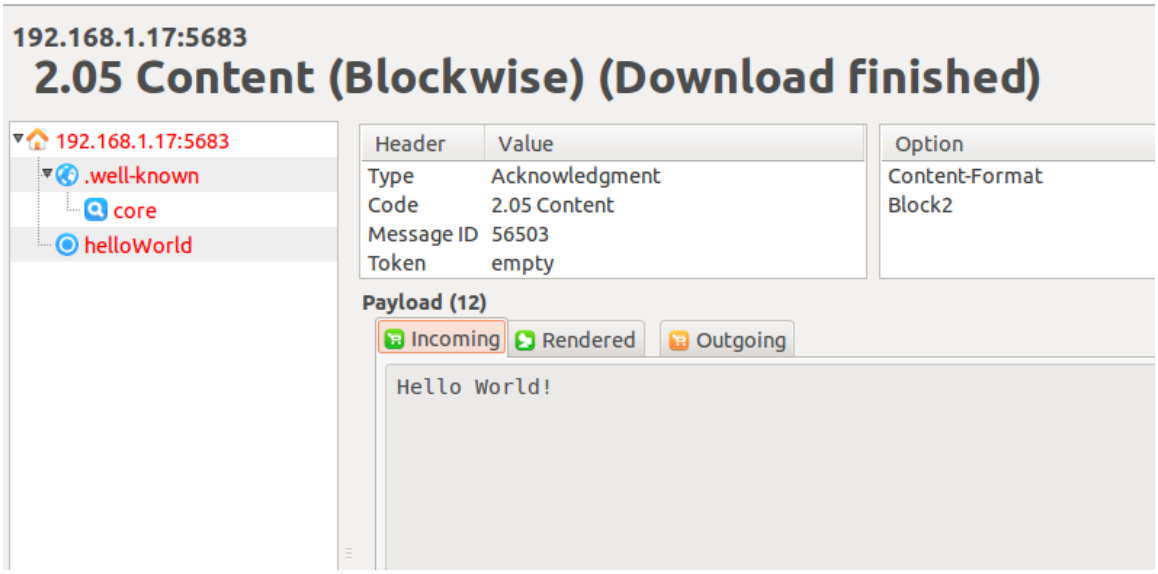
```
coap://192.168.1.17:5683/
```



Click "core", then click GET, you will get all the ***resources*** on the server. In this example, the resource name is "helloworld":



Then click "helloworld" and GET, you will get the response which is sent back by the "helloworld" resource, which is the string "Hello World!":


192.168.1.17:5683
2.05 Content (Blockwise) (Download finished)
192.168.1.17:5683
.well-known
core
helloWorld
Header
Value
Type
Acknowledgment
Code
2.05 Content
Message ID
56503
Token
empty
Option
Content-Format
Block2
Payload (12)
Incoming
Rendered
Outgoing
Hello World!